COMSATS INSTITUTE OF INFORMATION TECHNOLOGY

CIIT PHYSICS BULLETIN

Department of Physics, COMSATS Institute of Information Technology, Defence Road, Off Raiwind Road, Lahore
UAN: 111-001-007 Fax: 042-9403100

Inside this issue:

Science Beyond Boundaries	2
New to Department	4
Research with Impact	6
Education & Outreach	8
Phase Transitions	8
Graduate Spotlight	9
Undergraduate Spotlight	10
Graduating Alumni	11

Editorial

Welcome to this edition of the Department of Physics Newsletter. The primary purpose of this newsletter, as many of you may think, is to showcase your achievements, awards, moves, knowledge and most importantly to connect. And so we present here. Here we highlight some of the major activities which took place not only within the department but also where the inter-departmental knowledge fever has been extended to community at large.

I also believe that hearing student biographies of their academic experiences adds another perk to a usual routine work day of an instructor. Hence, we tried to incorporate that as well and bring the two generations together. We share the story of one of one of our bright student, Amna Najam who competed for Asian Science Camp 2014 going to be held in Singapore thus proving that our students are ready to face the world. While this is one success story but the goal is cover experiences from other arenas which directly or indirectly influence career and personal growth.

It is all about presenting YOU!... Please join me on this shared track. I am always eager to know your views and visions. Let it be by email or in person. This is my first newsletter as an editor for the Department of Physics, CIIT Lahore. I therefore would like to thank and acknowledge Ms. Samia Aslam to act as a co-editor and provide useful suggestions from time to time. I also would like to thank all the student contributors specially Sophia Akhtar for agreeing to help in order to cover the student activities.

Wish you a healthy and productive next semester.

Sincerely yours,

Dr. Ayesha Jamil

Message From the Head

Physics is one of the universal subjects in physical, medical, and engineering sciences and is basically a study of matter and energy along with their mutual interactions. There is a continuous spectrum of exploration in physics, from the edge of our understanding to applications for everyday uses. Physicists are bound together in their passion to find and solve interesting and important puzzles for the benefit of humanity.

The department of Physics at COMSATS Lahore feels proud of its stimulating environment, which actually fosters students to achieve their utmost prospective to become outstanding Physicists. The mixture of academic strengths within the department as well as in COMSATS, in general, is exhibited through an affable environment for students and faculty, excellent teaching facilities, highly qualified faculty, opportunities for student participation in research and outreach activities- all being the key factors for success here.

Dr. Saleem Farooq Shaukat
Professor and Head of the Department

Science Beyond Boundaries

NANO-SET (2014)

International Conference on Nano-Science and Energy Technologies

Pakistan has been facing the trauma of power shortage for last almost ten years. On the other hand the current gap between the scientific communities and the technology partners is intensifying the situation. To deliberate on the energy issue, a three days International conference from March 18-20, 2014, on the "Impact of Nano-Science on Energy Technologies (NanoSET-2014) was organized by Physics Department, COMSATS Lahore. The purpose of this conference was to bring together diverse innovative to successfully develop environmental and economically sustainable nanotechnologies in energy sector. Prof. Dr. Khaleeq-ur-Rehman, Vice Chancellor, Government College University, Lahore, Dr Samar Mubarakmand (Nishan-e-Imtiaz, Hilal-e-Imtiaz, Tumgia-e-Imtiaz, Sitar-e-Imtiaz) and H E Ambassador of Denmark, Jesper M. Sorensen have been the chief guests at the Opening and Closing ceremonies.

The symposia included energy harvestion and storage schemes based on Clean Energy, Solar, Hydro, Wind, Biomass, Fuel Cell and Batteries. The conference featured experts from various national and international universities from Sweden, United Kingdom, Finland, Iran, Austria, Saudi Arabia who offered a wide range of implementable ideas, insights and best practices to promote energy sustainability.

The International Conference, featured more than fifty five (55) talks and plenary sessions by eminent Scientists, Scholars, and researchers from the renowned National and International Institutes. The keynote lectures were delivered by Prof. Bin Zhu, Prof. N. M. Butt, Prof. Viktor Hacker and Prof. Khurram Saleem Joya. The participants discussed the possibilities for material improvement, optimal efficiencies, environmental compatibilities, design options as well as the cost balance of various emerging energy generation as well as storage technologies including batteries fuel cells, solar cells etc. The event also hosted a poster competition among the participating research students to further encourage their research potential.

A prize distribution ceremony was held at the end of the conference and souvenirs were presented to the invited guests and conference chairs. Also the chief organizer Prof. Saleem Farooq Shaukat (HOD, Physics Dept.) shared his views and concluded the conference. Prof. Mahmood Ahmad Bodla, Director Lahore Campus also graced the occasion with his kind presence.

Indeed, no country can achieve energy security, and environmental sustainability alone . NANO-SET proved to be a platform for this shared resolve.

The momentum generated by sharing of ideas is surely believed to reinvigorate the energy security campaign at both national and international level along with the fruitful outcomes at the academic level in the form of nation-wide research collaborations.

Science Beyond Boundaries

PHYSICS Department
Joins Hands with
SYNERGY Enterprises

The department of Physics, CIIT Lahore is also pleased to announce the execution of a Memorandum of Understanding with the Synergy Enterprises Private Ltd. Lahore. The Danish company is believed to be in the technology business for more than half a century. Recently Synergy started the implementation of nanotechnology related training programs and marketing of nanotechnology tools for industry and academic research.

The MoU opens up arenas for joint research collaborations between the participating entities for the development of training and research infrastructure as well as organization of joint debates concerning advance technological ideas.

Both parties plan to embark upon mutual collaborations in establishing nano-tech and simulations laboratories, hi-tech research projects, exchange and transfer of knowledge with Danish universities as well as industry and encouraging use of software tools and lab equipment of Danish origin.

The parties also agreed upon organizing joint seminars, workshops and conferences for the best promotion of training and research.

New to the Department…

Dr. Ayesha ANJUM has recently joined as an Assistant Professor at Physics Department, CIIT, Lahore. Dr. ANJUM has completed her PhD in Radiophysics and Medical Imaging from "Institute National de Santé et Recherché Medicale "INSERM" Hospital Purpan, Toulouse, France in 2013. During her stay at France, she worked under the supervision of Prof. Dr Pierre PAYOUX (Head of Nuclear Medicine department, Purpan Hospital, Toulouse, France), and Abdel-Kader BOULANOUAR (Research Engineer at INSERM) and her PhD dissertation surrounds the quantification of biomedical images, kinetic modeling of biomedical tracers, classification of alzheimer's disease by using machine learning approaches and spatial interpretation of brain. She completed her MS-degree in radiophysics and medical imaging in 2008 from University Paul Sabatier, Toulouse, France. Dr. ANJUM has presented her research work at several International scientific platforms.

Dr. Azmat IQBAL who did his PhD in high energy physics from Centre for High Energy, Physics (CHEP) University of the Punjab (PU), Lahore, has also joined the department as an Assistant Professor in the last semester. Dr. IQBAL has been working on analysis of data of BES III (Beiging Spectrometer III) experiment for my PhD project funded by the HEC on Indigenous Scholarship. He did his MPhil in High Energy Physics from CHEP, PU Lahore in 2008. Earlier, he completed his Masters in Physics from Govt. College of Science, Wahdat Road, Lahore. Dr. IQBAL's book Physics X has been published and selected by Punjab Textbook Board, Lahore as text book for class 10, after open competition. His areas of Interest include experimental High Energy Physics (data analysis, simulations), theoretical Particle Physics and Nuclear Physics (Form Factor, Effective Range Theory), Quantum Mechanics (Scattering Theory, Variational Techniques), Atomic and Molecular Physics, Solid State Physics (Photo-detachment, Closed Orbit Theory).

The department was also honored with the joining of **Dr. Muhammad Junaid AMJAD** who completed his PhD from Universiti Teknologi, Malaysia in Physics and Material Science. He is interested in investigating the effect of metallic NPs on the optical and structural properties of rare earth-doped tellurite and phosphate glasses, Nanophotonics, Quantum dots, Judd-Ofelt analysis. Earlier he completed his M. Phil degree from University of Punjab, Lahore in Solid State Physics and a Master's degree from Govt. College University, Lahore in the same field.

Dr. Muhammad SALEEM, who also joined the department as an Assistant Professor completed his PhD from Chongqing University, Chongqing, P.R. China. Dr. SALEEM research interests include synthesis and characterization of various nanostructures for direct applications in Dye-sensitized solar cells. He has published various research papers in well-reputed international journals. Earlier, he completed his Masters degree from The Islamia University, Bahawalpur with a specialization in Digital Electronics. His research interests include development of nanostructures using various Sol-gels, hydrothermal, solvo-thermal, hydrothermal, precipitation as well as Hummer's method for optimal device efficiencies including solar cells.

New to the Department…

Another addition to the Physics family is **Dr. Naima AMIN** who completed her PhD in Medical Physics from The Islamia University of Bahawalpur Pakistan in 2011. She performed her experimental research wok in Ninewells Hospital, University of Dundee, Scotland UK. Her field of specialty is Radiology. She is looking forward to some new research projects in Radiology (MRI, PETCT, and PET MRI, Radiotherapy etc). She is aiming to improve the diagnostic and treatment methods related to the Radiology and Radiotherapy. She is very enthusiastic about teaching and quality education and moral guidance is her focused aim during her teaching profession.

Dr. Saif-ur-REHMAN has also been appointed as an Assistant Professor (April 2014) in Department of Physics, COMSATS Institute of Information Technology, Lahore. He completed his PhD degree in Physics (Nano-Optics) from University Mohammed V-Agdal, Rabat, Morocco in 2013. He worked as a PhD research fellow at Moroccan Foundation for Advanced Science, Innovation and Research, which is the first research institute on Nanosciences and Nanotechnology in Morocco. He received his M. Phil degree in Applied Physics from Department of Physics, University of Engineering and Technology, Lahore in 2007 and a Masters in Physics in 2004 from the same institute. Dr. REHMAN has almost eight years of research experience (multidisciplinary) in nano-optics and thin films, nano-biotechnology, surface plasmon resonance spectroscopy, biosensing, ultrafast laser nanofabrication and nanomaterials characterization e.g., XRD, SEM, TEM, and AFM etc. During his scientific research carrier, he worked with Advanced Physics Lab, UET, Lahore, Nanobiotech Lab, NIBGE, Faisalabad, iThemba LABS, Cape Town & CSIR Labs, Pretoria, South Africa, MASCIR Nano-Optics Lab, Morocco and JEOL Ltd., Tokyo, Japan. Dr. REHMAN has been the author and co-author of seven research articles published in high impact factor ISI index peer reviewed journals, the cumula-

The Department of Physics proudly welcomes its new faculty members on its venture of exploring educational and research excellence.

Impact Research

Research Publications (Spring 2014)

On-chip generation and guiding of quantum light from a site-controlled quantum dot.
A. Jamil, J. Skiba-Szymanska, S. Kalliakos *et al. Applied Physics Letters, 104, 101108*

Solar wind driven dust acoustic instability with Lorentzian kappa distribution.
K. Arshad, **Z. Ehsan**, S. A Khan and S. Mahmood, *Physics of Plasmas, 21, 023704*

Lattice modes in a dusty plasma crystal.
A. Abdikian and **Z. Ehsan**, *Phys. Scr., 89, 025601*

Amplitude Analysis of the $D+\rightarrow K0S\pi+\pi0$ Dalitz Plot.
M. Ablikim, M. N. Achasov, …, **S. Nisar** et al., *Phys. Rev. D, 89, 052001*

Observation of a charged (DD*bar)- mass peak in e+e- --> pi+ (DD*bar)- at Ecm=4.26 GeV.
M. Ablikim, M. N. Achasov, …, **S. Nisar** et al., *Phys. Rev. Lett., 112, 022001*

Study of Plasma Current Density and Q-profiles for Circular Cross Section Tokamak.
M. Asif, *Physical Science International Journal, 4(4), 649*

Influence of Cd substitution on structural, electrical and magnetic properties of M-type barium hexaferrites co-precipitated nanomaterials.
M. F. Din, I. Ahmad, M. Ahmad, M.T. Farid, M. A. Iqbal, G. Murtaza, **M. N. Akhtar**, I. Shakir, M. F. Warsi, M. A. Khan, *Journal of Alloys and Compounds, 584, 646*

Investigations of Structural and Magnetic Properties of Nanostructured Ni0.5+xZn0.5-xFe2O4 Magnetic Feeders for CSEM Applications.
M. N. Akhtar, N. Yahya, **A. Sattar**, M. Ahmad, **M. Idrees**, **M. A. Hassan** *et al., International Journal of Applied Ceramic Technology, 01*

Fabrication and temperature-dependent magnetic propertiesof one-dimensional multilayer Au–Ni–Au–Ni–Au nanowires.
S. Ishrat, K. Maaz, K. J. Lee, M-H. Jung , G.-H. Kim, *Journal of Solid State Chemistry, 210, pp. 116*

Beam driven upper-hybrid-wave instability in quantized semiconductor plasmas.
M. Jamil, A. Rasheed, C. Rozina, W. M. Moslem, and M. Salimullah, *Physics of Plasmas, 21, 020704*

Influence of high workfunction ITO:Zr films for the barrier height modification ina-Si:H/c-Si heterojunction solar cells.
S. Q. Hussain, S. Kim, S. A. Nagarajan, B.Youngseok, L. J. Hyeong, L. J. Yi, *Solar Energy Materials & Solar Cells, 122, 130*

Electrochemical study of nanostructured electrode for low-temperature solid oxide fuel cell (LTSOFC).
G. Abbas, **R. Raza, M. A. Ahmad**, M. A. Chaudhry, A. Khan, I. Ahmad and B. Zhu, *International of Energy Research, 38, 518*

$Ce_{0.8}(SmZr)_{0.2O2}$-carbonate nano-composite electrolyte for solid oxide fuel cell.
R. Raza, M. A. Ahmad, J. Iqbal, N. Akram, Z. Gao, **S. Javed,** and B. Zhu, *International of Energy Research, 38, 524*

Structural and magnetic properties of Nd–Mn substituted Y-type hexaferrites synthesized by microemulsion method.
G. Murtaza, R. Ahmad, T. Hussain, R. Ayub, I. Ali, M. A. Khan, **M. N. Akhtar**, *Journal of Alloys and Compounds, 602, 122*

Research Publications (Spring 2014)

Entanglement dynamics and quasi-probability distribution for the degenerate Raman process.
Q. Liao, Y. Liu, Q. Yan, **M. A. Ahmad,** *Optik- International Journal for Light and Electron Optics, 125(6), 1739*

Silver nano particles enhanced luminescence of Eu3þ-doped tellurite glass.
R. J. Amjad, M. R. Dousti, M. R. Sahar, **S. F. Shaukat**, S. K. Ghoshal, E.S. Sazali, Fakhra Nawaz, *Journal of Luminescence, 154, pp. 316-321*

Linearly coupled oscillations in fully degenerate pair and warm pair-ion astrophysical plasmas.
S.A. Khan, M. Ilyas, Z. Wazir, **Z. Ehsan,** *Astrophys. Space Science, 350 (2)*

Entanglement dynamics and quasiprobability distribution for the degenerate Raman process.
Q. Liao, Y. Liu, Qiurong Yan, **M. A. Ahmad,** *Optik - International Journal for Light and Electron Optics,* 125 (6), *1739-1744*

Nano-silver enhanced luminescence of Eu3+-doped lead tellurite glass.
M. R. Dousti, M.R. Sahar, M.S. Rohani, A. Samavati, Z. Ashur Mahraz, **R. J. Amjad**, A. Awang, R. Arifin, *Journal of Molecular Structure, 1065, 39-42*

Synthesis, Characteristics and Applications of Zno Nanowires in Dye-Sensitized Solar Cells via Water Bath Method.
M. Saleem, L. Fang, **M. A. Ahmad, R. Raza**, F. Wu, W. J. Li, C. L. Xu, L. Hu And S. J. Xue, *NANO: Brief Reports and Reviews, 9 (6), 1450061- 1450068*

Nuclear model analysis of excitation functions of proton, deutron and Alpha particle induced reactions on nickle isotopes for production of the medically interesting copper-61.
M. N. Aslam and S. M. Qaim, *Applied Radiation Isotopes, 89, 65-73*

Beam excited acoustic instability in semiconductor quantum plasmas.
A. Rasheed, **M. Jamil**, M. Siddique, F. Huda and Y.-D. Jung, *Physics of Plasmas, 21, 062107*

Observation of electromagnetic Dalitz decays $J/\psi \to Pe+e-$
M. Ablikim, M. N. Achasov…….. **S. Nisar** et al., *Physical Rev. D, 89, 092008*

Measurement of the $D \to K^- \pi^+$ strong phase difference in $\psi(3770) \to D^0 D^0$
M. Ablikim, M. N. Achasov…….. **S. Nisar** et al., *Phys. Lett. B, 734, 227*

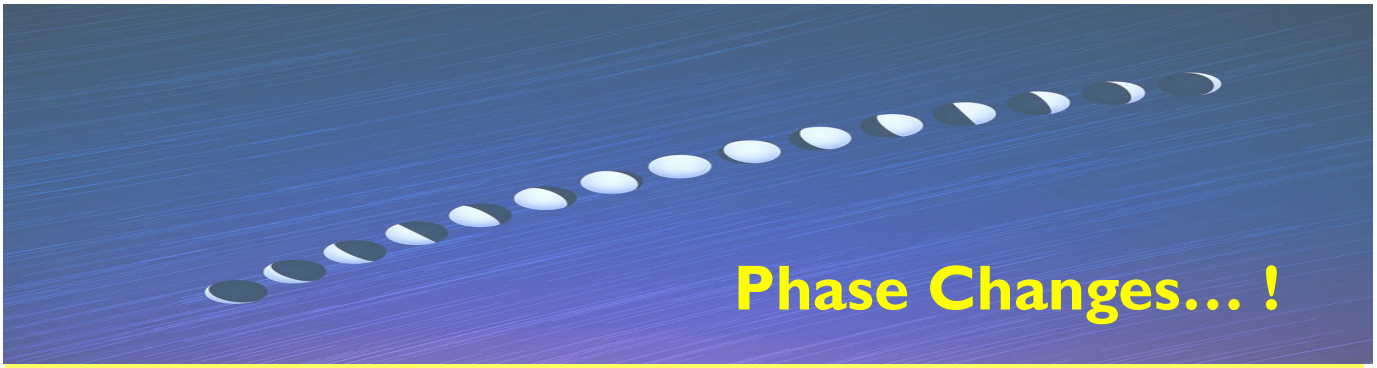
Search for the rare decays $J/\psi \to D-sp+$ and $J/\psi \to D^-0K^-*0$
M. Ablikim, M. N. Achasov…….. **S. Nisar** et al., *Physical Rev. D, 89, 071101*

Measurement of χcJ decaying into $\eta' K+K-$
M. Ablikim, M. N. Achasov…….. **S. Nisar** et al., *Physical Rev. D, 89, 074030*

Precision Measurements of $B(D+ \to \mu+\nu\mu)$, the Pseudoscalar Decay Constant $fD+$ and the CKM Matrix Element
M. Ablikim, M. N. Achasov…….. **S. Nisar** et al., *Physical Rev. D, 89, 051104*

Outreach & Education

The Department is also at the forefront in promoting education to the community at large. To support the cause, our faculty specially Dr. Amir Razzaq and Dr. Muhammad Ashfaq Ahmad have been very actively engaged to improve and encourage learning science and its place in modern technology. The department held a project exhibition based on basic laws of Physics at the Prime Minister's Punjab Youth Festival. Dr. Saleem Farooq Shaukat (Head of Department) and Dr. Zahida Ehsan delivered public lectures to promote scientific learning and its place in the current technology revolution.



Reliving the old saying that change is the only constant in life, the department has seen many variations "constantly" throughout the last semester. The most significant ones to be;

- Ms. Samia Aslam and Mr. Muhammad Kaleem Ullah got themselves enrolled as PhD scholars in the current graduate program being offered by Physics Department at Lahore Campus. Both are on study leave and exploring the colors of science and research. The department wishes them all the best for their future endeavors.
- Warm wishes for Dr. Ishrat Sultana who got married thus entering a new phase of life. The department would also like to congratulate Dr. Majid Niaz Akhtar and Mrs. Majid Niaz Akhtar for their wedding which took place during last semester. The wishes are also extended to Dr. Junaid Amjad and Mrs. Junaid Amjad who also got recently married.
- Dr. Hammad Aziz who was a part of CIIT faculty in Islamabad Campus has recently joined CIIT, Lahore Campus as an Assistant Professor.
- Congratulations to Ms. Samia Aslam and Ms. Faiza Mustafa on the birth of their baby son. Also congratulations to Dr. Rizwan Raza on the birth of his baby daughter.

Students' Corner

Graduate Spotlight

Solar Technology: A Journey Towards New Horizons

Submitted by
Samia Aslam (PhD Fellow)

Sun delivers power in the form of solar energy which is enough to fulfill the global energy demands to an astonishing extent. It is now realized that the sunshine thrown by the sun on our planet in one hour is sufficient to meet the global energy needs for a whole year. In comparison to contemporary renewable energy technologies, photovoltaics (PV) or solar cells are the most efficient and fruitful at extracting power without contaminating the environment with carbon compounds. Being fully a clean energy technology, they are also termed as green power.

Solar cell technologies are conventionally divided into three generations. First generation cells based on silicon wafers offer a power conversion efficiency of about 20%. These solar cells are widely commercialized nowadays. These cells demonstrate good performance and high stability. Despite being widely in commercial use, they are inflexible and expensive for they require lot of energy in production.

The second generation solar cells are based on amorphous silicon, Copper Indium Gallium Selinide (CIGS) and Cadmium Telluride (CdTe). As these materials are cheaper in comparison to silicon wafers, the production cost is decreased. However, they offer power conversion efficiency of 10-15% only. The second generation cells are flexible to some extent, however their production yet requires high tech vacuum processes and temperature treatments.

The scientific communities aspire to attain the low cost solar energy devices, enhancing their power conversion efficiency and a realization of highly efficient flexible solar panels that can be pasted over window panes of the buildings instead of being installed on the roof tops. This motivation leads towards the exploration of a third generation of cells. This class of cells often referred to as future or next generation PV- technologies include dye-sensitized (DSSC), organic or bulk heterojunction (BHJ) and quantum dot solar cells. The ease of fabrication, band gap tunibilty for light absorption, photostabilty and convenient transformation into flexible solar panels declare them as superior most future photovoltaic technologies. Semiconductor nanostructures and polymers are used as light absorbers in these types of cells. The photochemical event occurring in these cells is the injection of charge carriers from the excited light absorber (dye/polymer /quantum dot) into the mesoscopic semiconductor oxide and their transport across the interface and towards the opposite electrode.

The theoretical efficiency for semiconductor nanostructured solar cells has been predicted to be more than 66 %. The practical efficiency for DSSC has reached 12 % while that of polymer based solar cells is reported to be 8%. In Quantum dot solar cells the efficiency for liquid junction based QDSC 5% while that of solid-state QDSC has been reported to be 7%. Recently perovskite based QDSC have demonstrated around 11 percent efficiency which makes them at par with the DSSC and polymer based solar cells.

Immense research is being carried out to overcome the barriers in terms of mastering the interplay of scientific phenomenon to fabricate third generation solar cells. Apart from obtaining conversion efficiency as predicted in literature, their degradation and cell encasing is another big challenge to meet. Their foothold in the future solar cell market highly depends upon if the remarkable features which they offer are truly realized.

Among third generation solar cells, DSC (Dye sensitized solar cell) and OPV (Organic photovoltaic) technologies have occupied the current market. Dyesol, Fujikura, Panasonic and Sony are at the forefront of DSC technology developments .They are working on novel materials for these cells and endeavoring to provide cells commercially having a life upto 12 years. Plextronics has demonstrated large area OPV modules with a realized efficiency of 2.3 percent active area efficiency. Konarka Technologies is now pushing ahead with the commercialization of its OPV Power Plastic material, initially for lower power consumer electronic applications during 2010 using several partners including Cymbet Corporation, Noon Bags and Sky Shades. Quantum Materials Corp. (USA)(OTC: QTMM) and its subsidiary Solterra Renewable Technologies, Inc. is a development stage company in the nanotechnology field for Quantum Dot (QD) and Solar Cell manufacturing.

Students' Corner

Undergraduate Spotlight

Between the Cup and the Lip

By: Amna Najam
Roll # SP11-BPH-002, 7th Semester

It all started one day when Dr. Naveed Aslam, Assistant Professor in Physics and our batch advisor, walked into our lecture room after class and asked "Which of you have CGPA 3.5 and above?" Three of us had the required CGPA. We were asked to report to him as soon as we were free. Three hours later he informed us about a conference to be held in August 2014 in Singapore. He advised us to submit our documents to get nomination from our institute for the selection as Pakistan delegates for a sian Science Camp – 2014 (ASC-2014). This was 7th of March 2014 and final date for submission was 14th of March.

The Asian Science Camp (ASC) is an annual forum which aims to enlighten science -talented youths through discussion and dialogue with top scholars in the world and to promote the international friendship and cooperation among the best young students of the next generation in Asia. The National Center for Physics (NCP), Quaid-e-Azam University Campus in Islamabad is the "Focal point in Pakistan" for the selection of Pakistan delegate to the ASC. Dr. Riffat Mahmood Qureshi is acting as "Contact Person in Pakistan" for ASC-2014 to be held in Singapore.

On Thursday 20th March, HOD finally declared that we will be leaving for Islamabad on Friday at 12:00 noon. Arrived at the university with our baggage on the morning on Friday 21st March which we dropped at the girls' hostel and went to our classes. At 10:00am we were told that 12:00 noon ride was cancelled as the buses and coaches were busy for the trips in the student week which was starting on Saturday. After making several calls to the transport office we were finally accommodated on a bus taking Electrical Engineering students to Murree at 10:00 pm.

That night at 10:40 pm we started for Islamabad with Electrical Engineering students who were on their way to Murree. The trip was no fun for the six of us. We were tired and sleep deprived, whereas the students on the bus were filled with excitement and in no mood to sleep. Yet I was too tired to stay awake and fell into merciful sleep. I was woken up by my friends when we reached our destination at about 4:00 am. We were accommodated at a guest house at NCP.

After breakfast we got to meet students from other institutes and shared our nervousness and excitement. We were unprepared for our test: whereas most of the other students around us had their notes out or were discussing topics with their teachers. Around 10:00 we had our written test which consisted of MCQ's followed by a long wait for our interviews.

The interview was terrifying. Each student had to face a panel of five highly qualified researchers. There was a barrage of questions relating to our final year project and our current subjects of study. Some questions from other areas of science were also asked. I think half of my answers were wrong and some I didn't know, which I told them, and other answers were not even completed before another question was fired. At the end of the interview I was asked questions like "What would you do if someone offered you a drink in Singapore?" and "What would your reaction be towards someone if they call you terrorist because you wear hijab?" They did not clarify that drink meant alcoholic drink or otherwise. So I hesitantly answered that since Singapore is not a Muslim country I will decline the offer and on their insistence explain that it is not allowed in our religion. To the second question I answered that I will simply explain to them that wearing hijab does not make me a terrorist and that our religion is against terrorism and those involved in terrorism are not necessarily Muslims. I was the first from five of us to appear and I came out quite sure that I won't make it into the Pakistan delegate stage. Sofia reported that she was asked similar questions and gave similar answers but she seemed much more confident than me. Khurram's interview went well. But Hina and Fatima were asked different questions.

We were invited to a complimentary lunch on behalf of NCP followed by a visit to the Pakistan China Friendship Center in Islamabad where an inauguration ceremony was held. We were pleasantly surprised to see many faculty members of our University who had come to attend the event from Lahore.

We returned on a bus full of faculty members. It was a peaceful ride. We all came home thinking that our chances of making it were slim. The list was announced two weeks later. My name was in the list.

The happiness and excitement was short lived. Dr. Riffat, director of CAAD at NCP in Islamabad congratulated me and then informed me that there is an age limit for participation that I did not meet. I was given two choices: Back out or go through with it and see what happens. I opted for the second choice. The list was sent to Singapore for approval and it turned out that they had accepted my nomination. There was a small essay competition held amongst the 8 selected students for ASC fellowship. The winner will go free to Singapore as their travel expenses will be handled by the organizers in Singapore. A student from Jamshoro University won the contest.

I am all set to go to Islamabad for preparation, coaching and visiting key research laboratories in Islamabad but from the first day uncertainty hanged heavy. Indeed, there's many a slip between the cup and the lip.

Students' Corner

Undergraduate Spotlight

Memories of NCP, Islamabad

By: Sophia Akhtar
Roll # FA11-BPH-040, 6th Semester

We reached National Centre for Physics (NCP), Islamabad at 4:20 AM. The air was very chilling. At the gate, we marked our attendance then we were guided to our suites for stay. The dark night made the beauty of the ambiances unnoticed. In the morning at 7'o clock, I was stunned by the look of surroundings when I glanced outside from balcony of the suite. NCP surrounded by hills and greenery was looking astounding. That sight was overwhelming. I brought myself back from the spell of this sight and get myself ready. We had our breakfast at the café.

The interaction with other students was a nice experience. At 9:30 AM we were escorted to the examination hall for the test and interview. We seated in the examination hall on our respective seats and were introduced to other members by Dr. Riffat M. Qureshi, Director CAAD. We were given instructions and then we had our test. After the test, we were guided downstairs for a group photo with all faculty members and students. We waited our turn to come for interview. Interview was very professional and we gained a great experience like this for the first time.

Afterwards we headed café for lunch. We took many snapshots to preserve the memories of this place forever. At 3:00 PM, we packed our bags and left NCP for PAK-CHINA Exhibition Centre. All the faculty members of our Physics Department, Lahore were present because COMSATS INSTITUTE OF INFORMATION TECHNOLOGY participated in this exhibition. It was a magnificent place to see. Spending a while there, we lookout many interesting gadgets and items there.

Having with us a lot of beautiful memories we boarded again for Lahore. This whole experience was tremendous and remarkable. We all had a wonderful and unforgettable time with each other. A memorable journey had come to an end.

How to win Nobel Prize in Physics?

By: Amna Najam
Roll # SP11-BPH-002, 7th Semester
(The essay submitted as an entry to compete for the Asian Science Camp Nomination)

According to Alfred Nobel's will, the prize is to be awarded to "*those who during the preceding year shall have conferred the greatest benefit on mankind*" related to physics. He stated that prize goes to one who "*shall have made the most important discovery or invention within the field of physics*".

The Nobel committee considers the impact and contribution of the work towards betterment of humanity. However, the deliberations of the Nobel committee are kept secret. Over the years, people have agreed and disagreed with the decisions of the Nobel committee to confer the Nobel Prize. For example, in the case of the award to Marconi, for the invention of Radio, many believe that Nikole Tesla who had a patent for it, already deserved it more.

Although the Nobel Prize is the most prestigious award, the scientists who have received it were not working towards this goal. Some characteristics of the Nobel Laureates other than their research may qualify them for the prestigious award. One of them undoubtedly is their intelligence. Other characteristics include their leadership qualities, publication of their research in peer reviewed articles and the number of citations their articles get.

The highest number of Nobel Laureates are from Switzerland and then from Sweden. According to Franz H. Messiler in his article ***"Chocolate consumption, Cognitive Function and Nobel Laureates"*** he shows that there is a "*significant linear correlation between the chocolate consumption per capita and the number of Nobel Laureates per 10 million persons in a total of 23 countries.*" In this study he concluded that chocolate consumption *"is a si-ne qua non for winning the Nobel Prize"*. Sweden turned out to be an anomaly here as the number of Nobel Laureates very high compared to the per capita consumption of chocolate. Franz speculated that this is probably because the selection committee for Nobel Prize is from Sweden.

So, whosoever wants to win the Nobel Prize should work hard in a socially relevant subject in Physics to human improvement, publish and eat lots of chocolate and let the Nobel committee decide.

COMSATS INSTITUTE OF INFORMATION TECHNOLOGY

Defence Road, Off Raiwind Road
Lahore

Alumni To Be… (Spring 2014)

Congratulations to all those graduating this semester. Wish you best of luck for future...

Sufyan Javed, Husnain Ahmed, Irtaza Hassan, Rehan Saeed, Aamir Usman, Bilal Ramzan, Zahid Mir, Arooj Anwaar ul Haq and Muhammad Khurram Farooqi for graduating with Master in Science (MS) degree.

Also to
Dildar Ahmed, M Ehsan, Farrukh Shahzad, Arslan Ahmad, Rukhsar Razzaq, Aleena Akram, Shahid Iqbal, Bilal Ashraf Ch, Sahar Akram, Qasim Raza, Syed Ali Haider, M Munib Ashfaq, Sumbal Javed, Umair Idrees and Saira Batool for graduating with Bachelors in Science (BS) degree.

CIIT Physics Forum Membership Form

Sign Up With Us

Name: _____ Occupation: _____

Mailing Address: _____

Province: _____ City: _____ Postal Code: _____

Phone: ( ) _____ Fax: ( ) _____

How would you like to contribute?

_____
_____
_____

Authorized Signature: _____

Thank You!

We will be able to make this a successful platform through your support only. We welcome any suggestions from your side which can make the effort a fruitful success. Please feel free to contact us through any of the following means.
Looking forward to your comments/suggestions.

Dr. Ayesha Jamil
Email: ayeshajamil@ciitlahore.edu.pk
Phone: 042-111-001-007 Ext. 108
Fax: 042-9203100